

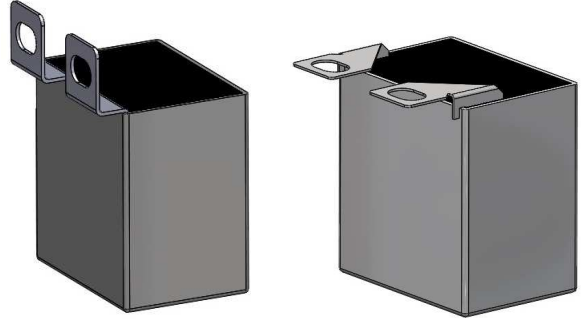
Snubber Capacitors

Metallized Polypropylene film capacitors

PCPW 237
(MMKP)

CONSTRUCTION

- Dielectric : Double side metallized PET film & Metallized polypropylene film
- Case : PBT (UL94 V-0)
- Filling : Epoxy resin (UL94 V-0)
- Terminals : Tin plated Copper



FEATURE

- Self-Healing
- Low contact resistance
- Low loss dielectric
- High ripple current
- High contact reliability

APPLICATION

- Snubber Capacitor for IGBT

QUICK REFERENCE DATA

Capacitance range	0.33 to 4.7 μ F
Capacitance tolerance	$\pm 5\%$, $\pm 10\%$,
Rated voltage (DC)	850V, 1000V, 1250V, 1600V, 2000V
Dissipation factor (DF)	0.0005 at 1KHz(0.1uF < C \leq 3.3uF)
Insulation resistance (IR)	10,000s after 1minute of electrification at 500Vdc(C > 0.33uF)
Climatic category	40 / 85 / 56
Temperature range	-40°C ~+105 °C
Max permissible ambient temperature	85°C (operation at rated power, rated current and natural cooling) (+85°C observing voltage and current de-rating)
Reference	IEC 60384-16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

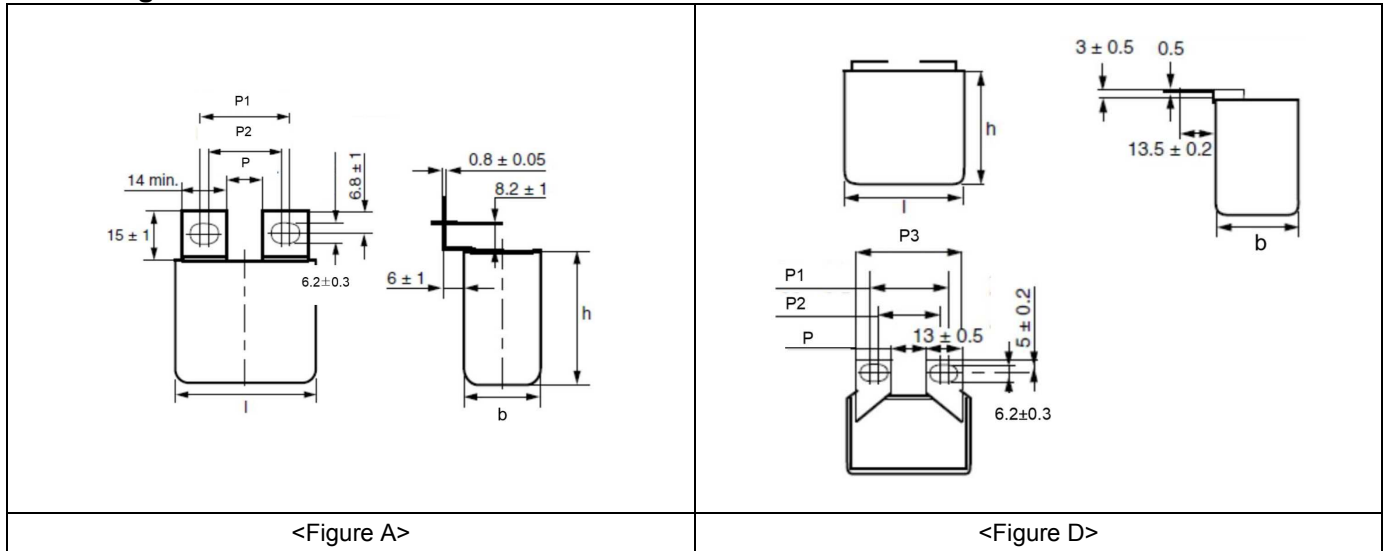
- Design and specifications are subjected to change without notice. Please refer to caution and warning at <http://www.pilkor.co.kr/sub/download/Introductions.pdf> before using these products.

TYPE SPECIFICATION

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Ordering Information



1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	2	3	7	Q	8	5	3	3	5	K	A	A	A

Digits 1~4	
Code	Series Name
P237	PCPW 237

Digits 5	
Code	Body Pitch
Q	42.0mm
T	57.0mm

Digits 6~7	
Code	Voltage
85	850
10	1000
12	1250
16	1600
20	2000

Digits 8~10	
Code	Capacitance (example)
335	3.3uF
336	33uF

Digits 11	
Code	Capacitance Tolerance
J	5 %
K	10 %

Digits 12	
Code	Revision
A	Standard

Digits 13~14						
Code	Packing Method	Figure	P (mm)	P1 (mm)	P2 (mm)	P3 (mm)
AA(42.0mm)	Arrange Packing	A	10.0±1.0	28.0±0.5	23.0±0.5	-
AA(57.0mm)	Arrange Packing	A	25.0±1.0	43.0±0.5	38.0±0.5	-
DF(42.0mm)	Arrange Packing	D	12.0±1.0	28.0±0.5	22.0±0.5	38.0±1.0
DF(57.0mm)	Arrange Packing	D	27.0±1.0	43.0±0.5	37.0±0.5	53.0±1.0

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 $V_{Rdc} = 850V$ $V_{Rac} = 450 V$ $V_{peak} = 1200 V$

Cap (μF)	b x h x l (mm)	Figure	dv/dt (V/us)	I _{peak} (A)	I _{RMS} (A)*	ESR (m Ω)**	Ordering Code
1.5	20.0 x 35.0 x 42.0	A	400	600	15	9.0	P237Q85155KA**
2.2	28.0 x 37.0 x 42.0	A	400	880	16	6.0	P237Q85225KA**
3.3	30.0 x 45.0 x 42.0	A	400	1320	18	4.0	P237Q85335KA**
4.7	35.0 x 50.0 x 57.0	A	350	1645	20	3.0	P237T85475KA**

 $V_{Rdc} = 1000 V$ $V_{Rac} = 480 V$ $V_{peak} = 1300 V$

Cap (μF)	b x h x l (mm)	Figure	dv/dt (V/us)	I _{peak} (A)	I _{RMS} (A)*	ESR (m Ω)**	Ordering Code
1.0	20.0 x 35.0 x 42.0	A	450	450	14	6.0	P237Q10105KA**
1.5	24.0 x 39.0 x 42.0	A	450	675	16	5.5	P237Q10155KA**
2.2	30.0 x 45.0 x 42.0	A	450	990	18	5.0	P237Q10225KA**
3.3	35.0 x 50.0 x 57.0	A	400	1320	20	3.0	P237T10335KA**

 $V_{Rdc} = 1250 V$ $V_{Rac} = 500 V$ $V_{peak} = 1600 V$

Cap (μF)	b x h x l (mm)	Figure	dv/dt (V/us)	I _{peak} (A)	I _{RMS} (A)*	ESR (m Ω)**	Ordering Code
0.68	20.0 x 35.0 x 42.0	A	500	340	14	6.0	P237Q12684KA**
1.0	28.0 x 37.0 x 42.0	A	500	500	16	5.0	P237Q12105KA**
1.5	30.0 x 45.0 x 42.0	A	500	750	18	4.0	P237Q12155KA**
2.0	35.0 x 50.0 x 57.0	A	450	900	20	3.0	P237T12205KA**

(*)Maximum RMS current at +70 °C, 100KHz, $\Delta T = +15^\circ C$ (Hot spot temp. = $T_{amb} + \Delta T = 70^\circ C + 15^\circ C = 85^\circ C$)

(**)Typical ESR values at 100KHz, 20 °C

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 $V_{Rdc} = 1600 \text{ V}$ $V_{Rac} = 600 \text{ V}$ $V_{peak} = 2000 \text{ V}$

Cap (μF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR ($m\Omega$)**	Ordering Code
0.33	20.0 x 35.0 x 42.0	A	600	198	11	8.0	P237Q16334KA**
0.47	24.0 x 39.0 x 42.0	A	600	282	13	6.0	P237Q16474KA**
0.68	28.0 x 37.0 x 42.0	A	600	408	15	5.0	P237Q16684KA**
1.0	30.0 x 45.0 x 42.0	A	600	600	17	4.0	P237Q16105KA**
1.5	35.0 x 50.0 x 57.0	A	450	900	19	3.0	P237T16205KA**

 $V_{Rdc} = 2000 \text{ V}$ $V_{Rac} = 650 \text{ V}$ $V_{peak} = 2500 \text{ V}$

Cap (μF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR ($m\Omega$)**	Ordering Code
0.56	30.0 x 45.0 x 42.0	A	700	392	15	4.0	P237Q20564KA**
1.0	35.0 x 50.0 x 57.0	A	600	900	17	3.0	P237T20155KA**

(*)Maximum RMS current at +70°C, 100KHz, $\Delta T = +15^\circ\text{C}$ (Hot spot temp. = $T_{amb} + \Delta T = 70^\circ\text{C} + 15^\circ\text{C} = 85^\circ\text{C}$)

(**)Typical ESR values at 100KHz, 20°C

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CHARACTERISTICS

● Test Voltage

- . Test Voltage (between terminations) : $1.6 \times V_{Rdc}$, 10s (1 min for type test)
- . Test Voltage (between lead and case) : 3KV- 50Hz(or 60Hz) for 60 seconds

● Dissipation Factor

Rated voltage	Capacitance	Tangent of loss angle ($\times 10^{-4}$)		
		1 kHz	10 kHz	100 kHz
850~2000V	$0.1 \mu F < C \leq 4.7 \mu F$	≤ 5	≤ 8	-

● Insulation Resistance

The insulation resistance is measured for 1min \pm 5s, at 500V

Rated voltage	Minimum RC	Minimum Insulation
	Capacitance $> 0.33\mu F$	Capacitance $\leq 0.33\mu F$
$\geq 500V$	$> 10,000s$	$> 30G\Omega$

(R = insulation resistance between the terminations[Ω], C = capacitance[Farad])

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PRODUCT MARKING

Capacitors are marked on the top or on the top and one side with the following information :

- . Rated capacitance code in accordance with IEC 60062
- . Tolerance on rated capacitance : J : $\pm 5\%$ K : $\pm 10\%$
- . Rated (DC) Voltage (e.g. 850 V)
- . Code for dielectric material (MMKP)
- . Manufacturer's type designation (PCPW237)
- . Manufacturer's name (PILKOR)
- . Marking color : white or black

Example of marking

1u	K	850V	PILKOR
PCPW237	MMKP	WK....	

Marking on the top or side

TYPE SPECIFICATION

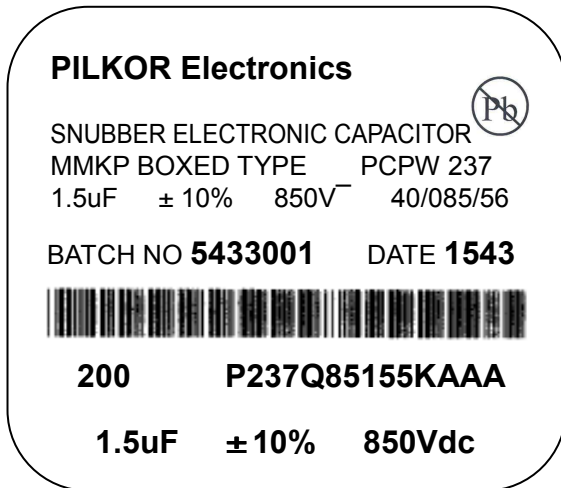
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PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

- 1 Manufacturer's name
- 2 Sub – family
3. Pb free marking(JEDEC-STD-97)
- 4 Type description & Series name
- 5 Capacitance value, tolerance, Voltage and climatic category (IEC)
- 6 Batch no. & production period year and week code
- 7 Quantity and Product code
- 8 Capacitance, tolerance and voltage

PACKING QUANTITY INFORMATION

SMALLEST PACKING QUANTITIES (SPQ)	Arrange Pack.		
	Figure A	Figure B	Figure D
20.0 x 35.0 x 42.0	20	20	20
24.0 x 39.0 x 42.0	20	20	20
28.0 x 37.0 x 42.0	20	20	20
30.0 x 45.0 x 42.0	16	16	16
35.0 x 50.0 x 57.0	9	9	9

TYPE SPECIFICATION